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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,356	11/29/2000	Elango Pakriswamy	V44.12-0138	1295

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EXAMINER	
HOLDER, REGINA NEAL	

ART UNIT	PAPER NUMBER
2651	8

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/725,356	PAKRISWAMY ET AL.	
	Examiner	Art Unit	
	Regina N. Holder	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 19, 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Amendment

1. The amendment filed 6/12/03 has been entered. Claims 1-16 and 19-20 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-16 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Voorman et al (5,559,646).

Regarding claim 1, AAPA teaches a differential amplifier circuit comprising first and second input nodes (VMR1, VMR2), first amplifier circuit (Q1, Q3, R1, I1) including an input transistor (Q1), second amplifier circuit (Q2, Q4, R2, I2) including an input transistor (Q2), first coupling circuit (C2), and second coupling circuit (C1). See fig. 3. However, AAPA does not teach the first and second coupling circuit including active elements.

Voorman et al teaches a differential amplifier comprising first and second coupling circuits including capacitors (C1, C2) and active elements (F1, F2) coupled in series between the respective input signal node and the input transistor of the other amplifier circuit. See fig. 6.

It would have been obvious to one of ordinary skill in the art at the same time the invention was made to modify the teachings of AAPA to include the teachings of Voorman et al, motivation being to obtain the desired cut-off frequency of the amplifier circuit as set forth in col. 5 lines 14-21.

Regarding claim 2, AAPA teaches input transistors (Q1, Q2), a collector circuits (Q3, R1 and Q4, R2) connected between a fixed potential (VCC) and the collector of the input transistor, and current generators (I1, I2). See fig. 3.

Regarding claim 3, AAPA teaches cascode stages (Q3, Q4).

Regarding claim 4, AAPA teaches the cascode stage includes a cascode transistor (Q3, Q4) and resistor (R1, R2).

Regarding claim 5, Voorman et al teaches the coupling circuit including a transistor (T4), capacitor (C1, C2), and current generator (21). See figs. 1, 2A, and 6. Although, Voorman et al does not specifically depict the capacitor connected to the emitter of the transistor, Voorman et al does teach that the capacitor is connected to the circuit including the transistor. Hence, the capacitor is connected to the emitter of the transistor. Furthermore, it is merely routine engineering to change the interconnections of an amplifier circuit and would have been obvious to one of ordinary skill in the art in order to enhance the circuit.

It would have been obvious to one of ordinary skill in the art at the same time the invention was made to modify the teachings of AAPA to include a transistor and current generator in order to obtain the desired cut-off frequency of the amplifier as set forth in col. 5 lines 14-21 of Voorman et al.

Regarding claims 6-10, these limitations are met in the rejection of claims 1-5.

Regarding claims 11-12, these limitations are met in the rejections of claims 1-5. AAPA also teaches a mr head. See pages 1-2.

Regarding claim 13, AAPA teaches first and second input signal nodes (VMR1, VMR2), first-fourth transistors (Q1-Q4), first and second resistors (R1, R2), first and second current

generators (I1, I2), and first and second capacitors (C1, C2). See fig. 3A. However, AAPA does not teaches fifth and sixth transistors and third and fourth transistors.

Voorman et al teaches fifth and sixth transistor (T4 in F1 and T4 in F2), capacitor (C1, C2), and current generator (21 in circuit F1 and 21 in circuit F2). See figs. 1, 2A, and 6. Although, Voorman et al does not specifically depict the capacitor connected to the emitter of the transistor, Voorman et al does teach that the capacitor is connected to the circuit including the transistor. Hence, the capacitor is connected to the emitter of the transistor. Furthermore, it is merely routine engineering to change the interconnections of an amplifier circuit and would have been obvious to one of ordinary skill in the art in order to enhance the circuit.

It would have been obvious to one of ordinary skill in the art at the same time the invention was made to modify the teachings of AAPA to include a transistor and current generator in order to obtain the desired cut-off frequency of the amplifier as set forth in col. 5 lines 14-21 of Voorman et al.

Regarding claims 14-16, these limitations are met in the rejection of claims 1-5. AAPA also teaches a mr head. See pages 1-2.

Regarding claims 19 and 20, Voorman et al teaches the step of coupling the respective capacitor and respective active element in series between the respective input signal node and the other amplifier transistor comprises connecting a control element of the active elements to the input signal nodes and connecting a controlled element of the active element to a control element of the other amplifier transistor. See fig. 6.

Response to Arguments

4. Applicant's arguments filed 6/12/03 have been fully considered but they are not persuasive.

Regarding Applicant's arguments that Voorman et al does not disclose first and second coupling circuit including a capacitor and an active element in series between an input signal and an input transistor, the examiner respectfully disagrees. Voorman et al teaches coupling a first input terminal (7) of one amplifier to an input transistor of another amplifier circuit (T2) and coupling a second input terminal (67) of the second amplifier to an input transistor of the other amplifier circuit (T1). See fig. 6.

Regarding Applicant's arguments that Voorman et al has nothing to do with reducing net capacitance between the input terminal of one capacitance between an input terminal of one amplifier circuit and input transistor of another amplifier circuit to lead to a higher upper cutoff frequency, Applicant has not claimed reducing net capacitance or a higher upper cutoff frequency.

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina N. Holder whose telephone number is (703) 308-4078. The examiner can normally be reached on 6:30 a.m. - 5:00 p.m. Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Regina Holder

Regina N. Holder
Primary Examiner
Art Unit 2651

rnh
August 12, 2003